

STAFF REPORT

**WASTE DISCHARGE REQUIREMENTS AND MASTER RECLAMATION PERMIT
FOR
CITY OF LATHROP
WASTEWATER RECYCLING PLANT
SAN JOAQUIN COUNTY**

INTRODUCTION

The City of Lathrop (Discharger) owns and operates a Wastewater Recycling Plant (WRP) in Lathrop, San Joaquin County that treats domestic wastewater from residential and commercial sources. After treatment, wastewater is recycled as irrigation water for land application areas. Existing Waste Discharge Requirements (WDRs) Order No. R5-2005-0045 allows treatment and application of up to 0.75 million gallons per day (MGD). The tentative Order under consideration maintains the 0.75 MGD flow limit. It would allow, but does not guarantee, the Discharger to increase the flow limit based on the treatment equipment, storage capacity, and land application area expansions. Expansions are needed because the City's population is growing with continuing development.

The WRP serves new developments in the City of Lathrop and consists of the collection system, mechanical treatment equipment, recycled water distribution piping, six HDPE-lined wastewater storage ponds providing a storage capacity of 150.7 Mgal, and 182.9 acres of land application areas. Presently, 102.2 acres of the total land application acreage described in the existing Order are owned by private corporations that are developing the land served by the WRP. The treatment system produces disinfected tertiary recycled water that is consistent with the definition in Title 22.

Staff has prepared the tentative Order to allow flexibility in changing the size and use of land areas for recycled water storage or land application. Changes to the approved configuration will be requested by the Discharger through Recycled Water Expansion Reports (RWERs) that will be approved, as appropriate, by the Executive Officer. The ultimate flow rate available under this Order is 6.24 MGD but the Order does not guarantee any flow rate increase over the presently permitted 0.75 MGD.

The Discharger expects land use to change with continuing development, and that may result in land that is presently used for land application or wastewater storage to be developed for other uses later. The tentative Order would allow such changes as long as adequate treatment, wastewater storage, and land application areas are maintained.

On 14 February 2006, the City of Lathrop submitted a Report of Waste Discharge (RWD) and a Title 22 Engineering Report for a wastewater treatment facility to treat and dispose of domestic wastewater. Additional information was received on 10 May 2006. The tentative Order was prepared as a Master Reclamation Permit described by California Water Code Section 13523.1(b)(1).

Wastewater Treatment

The WRP consists of the existing wastewater treatment system and proposed expansions. Proposed wastewater treatment facility mechanical components will be constructed in two nearby but separate areas. The system will consist of Water Recycling Plant No. 1 (WRP-1) and Water Recycling Plant No. 2 (WRP-2); collectively they are named the City of Lathrop Wastewater Recycling Plant (WRP). The WRP also includes the wastewater collection system, the recycled water storage ponds, the recycled water

delivery system, and all the recycled water land application areas. Both WRP-1 and WRP-2 will be regulated by the Order.

The existing treatment facilities at WRP-1 include fine screening, grit removal, influent pumping, influent equalization, nitrification/denitrification, activated sludge by means of a Membrane Biological Reactor (MBR), chlorine disinfection, and effluent pumping. Screenings and grit removed from wastewater are dewatered and placed in a dumpster, prior to being hauled off-site to the local landfill for disposal. Waste activated sludge is stored in a tank and dewatered using a belt filter press. Dewatered sludge is hauled off-site for subsequent land application at a permitted facility. Currently, effluent is disinfected using a sodium hypochlorite solution in a chlorine contact tank but an Ultra Violet (UV) disinfection system will be installed with the first expansion in flow rate for WRP-1 and UV will be used when WRP-2 is constructed.

Land Application Areas and Recycled Water Storage Ponds

As previously stated, there are 182.9 acres presently available for land application of recycled water and 150.7 million gallons (Mgal) of recycled water storage capacity. Additional wastewater storage ponds and land application areas will be constructed to accommodate future wastewater flow increases. As a result of continuing development in the area, some storage ponds and/or land application areas that are in use may be decommissioned or replaced by alternative facilities (e.g. land application areas converted to recycled water storage ponds or developed as residential or commercial use). This Order allows reconfiguring facilities pursuant to the requirements contained in the Provisions of this Order, applicable CEQA documents, and Executive Officer approval of RWERs. The tentative Order maintains the same land application areas that are currently described in Order No. R5-2005-0045. Additional land application areas will be added through the RWER submittal and approval process.

The water balance included in the RWD presents a calculation of land application area acreage and storage pond capacity that is required to support a 6.24 MGD flow rate under 100-year rainfall conditions. The Discharger has identified more developable land application area than is required. This excess land application area is available as needed should some proposed application areas be unusable for any reason, or should land application area requirements be greater than projected under actual future field conditions. Similarly, excess recycled water storage pond capacity will be available. The excess will be available as needed should some existing storage ponds need to be decommissioned, some proposed storage sites be unbuildable for unanticipated reasons, or should storage requirements be greater than projected under actual future field conditions.

The RWD identified 134 potential areas for land application or recycled water storage pond location. The land application acreage and the recycled water storage pond capacity both exceed the minimum values presented in the RWD water balance. For a flow rate of 6.24 MGD, the table below compares the minimum amount of land application area and recycled water pond storage capacity (as defined by the RWD water balance) with the amounts of each that have been identified in the RWD as potentially developable.

<u>Parameter</u>	<u>Units</u>	<u>Required Amount</u>	<u>Identified Developable Amount</u>
Application Area	Acres	1,551	2,389
Recycled Water Storage Pond Capacity	Mgal	1,016	1,552

Wastewater will be applied at agronomic rates in cropped areas based on the plant grown in the land area. In addition to cropped land application areas, infiltration basins may be developed. Infiltration basins will only be utilized where the evapotranspirative concentration of effluent salts by vegetation may cause unacceptable degradation of shallow groundwater. Infiltration basins will receive no more than 60-inches of effluent per year to prevent over application of recycled water and protect underlying groundwater quality.

Recycled Water Expansion Reports

Wastewater flow rate increases can be accomplished through submittal of RWERs and approval, as appropriate, by the Executive Officer. Because sufficient information on all potential land application areas is not presently available, the Discharger can, on an as-needed basis, perform the technical studies to evaluate if a proposed land application area is acceptable for use. Because the use of RWERs is central to the proposed Order's method of allowing flexibility to change wastewater application configurations, the contents of a RWER is described below. (Note that other technical studies are also required but not discussed below, for example, prior to new groundwater monitoring wells being installed, workplans must be approved).

1. A Form 200 for each property owner of the sites proposed for land application areas or recycled water storage ponds. The forms are required to identify the landowners of each parcel and to obtain a signature on the form indicating the owner has approved the waste application or storage activity on the land.
2. Documentation that a CEQA evaluation has been provided for the property, that the proposed use is consistent with the assumptions of the CEQA document, and that the mitigation measures included in the CEQA documentation have been implemented. Only CEQA documents that have already been adopted when the Order is adopted will be considered acceptable for the purpose of adding land application or recycled water storage facilities. If mitigation measures have been identified for any portion of the proposed land application area or recycled water storage pond, they must be addressed prior to submittal of the RWER. This is considered essential so that mitigation measures that may have been identified in the CEQA documents will be implemented. Furthermore, only CEQA documents that already have been adopted is similarly essential so that the public participation process is not abridged.
3. Groundwater monitoring is required at large land application areas, but smaller land application areas may not have groundwater monitoring directly associated with each area. The approach is intended to identify groundwater degradation, if it exists, at locations where it is most likely to occur (where more wastewater is being applied). A minimum of two sample events is required prior to submitting the RWER. Because the groundwater monitoring network may change as land areas change use, each RWER submittal will include a description of the groundwater monitoring network and a list of all wells included in the monitoring network.

4. Documentation of cross-connection control tests performed in accordance with the American Water Works Association (AWWA) and DHS guidelines. This requirement will minimize the possibility that recycled water is mixed with potable water. The collection system and recycled water distribution system will be complex so cross-connection tests are appropriate.
5. An explanation of mitigation measures to be implemented if any new, expanded, or modified facilities are within a 100-year floodplain. Land application areas in floodplains are acceptable only when the soil and climatic conditions comply with the WDRs, and wastewater is not applied when flooding is imminent or the land is flooded. All wastewater and recycled water storage ponds will be protected from the 100-year flood.
6. An updated water balance projecting the wastewater flow capacity resulting from the planned expansion and demonstrating compliance with the Discharge Specifications. Each RWER shall include an updated water balance that determines if the assumptions of the RWD require modification. The water balances submitted with the RWERs shall be consistent with the descriptions and assumptions provided in the RWD and described in the WDRs or will be more conservative. Because each RWER will propose new land application areas, it will be important to ensure adequate land application areas and storage pond capacity are available.
7. Water quality data from at least two groundwater sampling events is required to characterize groundwater quality at new sites prior to recycled water application or storage pond use. The wells must be specifically sited to monitor the groundwater beneath the new areas. As described above, groundwater monitoring networks will be designed to focus the monitoring efforts where more recycled water is applied. Staff anticipates a number of wells associated with larger land application areas and other wells placed over the general area providing a more regional area monitoring network. Groundwater monitoring will be required at all recycled water storage pond locations.
8. Confirmation that the proposed land overlies shallow groundwater with an average TDS concentration of 1,000 mg/L or greater. The application of wastewater will be limited to areas that possess elevated TDS concentrations. The RWD estimated the applied water TDS concentration to be 525 mg/L, and the percolate concentration to be approximately 969 mg/L. Limiting the wastewater application to areas with poor groundwater quality should limit the impact on groundwater quality from the discharge.
9. For each expansion of the wastewater treatment facilities beyond the 0.75 MGD initial capacity, the Discharger shall either apply for coverage or submit a Notice of Non Applicability for Order No. 97-03 DWQ, Discharges of Stormwater Associated with Industrial Activities. This requirement exists because of the large area over which the improvements will be constructed and the time in which the construction will occur.
10. For each expansion of the wastewater treatment facilities beyond the 0.75 MGD initial capacity, the Discharger shall obtain approval from DHS that the expansion is consistent with the Title 22 Engineering Report. Similar to the stormwater requirement, this requirement exists to ensure continuing compliance with DHS guidelines as construction proceeds. The complexity of the collection and recycled water distribution systems may raise issues with compliance with Title 22. DHS provides review on such issues.

11. Updates to the Interim Sewer System Management Plan (SSMP), or if the Discharger has completed the State Water Board certification process, provide recertification of the SSMP describing significant changes to the collection system and updates to the SSMP. As described above, the continuing construction activities and phased nature of the construction will require updates to the documents prepared for the State Board General Order.
12. Updates to the Master Reclamation Report. The Master Reclamation Report is required by CWC Section 13523.1 and requires the Discharger to develop rules for the use of recycled water and perform regular inspections. Because the wastewater system will be expanded, it is reasonable to require this update as part of the RWERs.
13. Confirmation that the emergency storage pond is adequate for the proposed increased flow is reasonable because Title 22 Section 60341 requires the pond to be sized based on flow rate. Because the wastewater system will be expanded, it is reasonable to require this update as part of the RWERs.
14. The *Recycled Water Operations Plan* was required by DHS in their 28 April 2006 letter approving the Discharger's Title 22 Engineering Report. The Plan was previously submitted under the requirements of WDRs Order No. R5-2005-0045. Therefore the Discharger can elect to provide addendums to the existing report or submit a complete new document. Updates to the Plan are necessary because the wastewater system will grow with continued development.

PUBLIC COMMENTS ON TENTATIVE ORDER

The tentative Order was transmitted for public review on 28 July 2006. Comments were received from the City of Lathrop (Discharger) and the California Sportsfishing Protection Alliance (CSPA). The comments were received within the comment period. Copies of the comment letters are provided as attachments. Significant comments are discussed below:

City of Lathrop Comments

Many of the Discharger comments were the result of a misunderstanding of flow limits described in the Order's findings. The Discharger requested the flow limit of 0.75 MGD be changed to 0.78 MGD to allow for infiltration and inflow. The 0.75 MGD value came from WDRs R5-2005-0045 and therefore the value can't be changed. The Discharger's comments are paraphrased in italics and staff's response is presented below. Many of the comments were simply clarification or corrections. Substantive comments are discussed below:

Comments on Waste Discharge Requirements

Comment No. 18 requested deletion of Findings No. 51 and 52, which provides a general description of sanitary sewer overflows and their hazards. A related item, Comment No. 42, requests a change to the RWER that requires an update to the Interim Sewer System Management Plan (SSMP).

The attachment that contained the State Board General Order has been deleted from the Order. Therefore the only description of the contents of Sanitary Sewer Overflows (SSOs) is contained in Findings 51 and 52. Staff believes it is appropriate to describe SSOs, their most frequent causes, and the hazards associated with SSOs.

The State Board General Order requires self-certification of a program to implement the SSMP. The SSMP must be updated every five years. Because the expansion of the collection system will occur fairly quickly, five years is considered to be inadequate by staff. Therefore, whenever the Discharger is proposing to increase the flow rate by at least 0.75 MGD, it is prudent to require that the documents prepared for the SSMP also be updated. Staff did not delete Findings 51 or 52, but provided some clarifying text to the RWER submittal requirement as a result of the comments.

Updates to the Interim SSMP that address all the items listed in Provision G.1.c above, or if the Discharger has completed the certification process described in D.14 of the State Water Board General Order No. 2006-0003-DWQ, provide recertification of the SSMP describing significant changes to the collection system and updates to the SSMP.

Comment No. 20 addressed the monitoring well network described in Finding No. 61. (In the revised Order, the Finding is No. 62).

The monitoring well network described in the Finding was consistent with the 26 April 2005 Groundwater Monitoring Workplan Addendum prepared by Hydrofocus and the 10 May 2006 RWER prepared for WDRs Order No. R5-2005-0045. The comment consists of a number of bullets; some of the proposed changes are acceptable, but others are not consistent with other report requirements and a need for groundwater quality data. Each of the bullets is described below:

In bullet one, the Discharger proposes to remove the analytical testing requirement for four wells. Staff agrees that sampling for chemical analysis can stop on Wells MWR-1 and MWR-4, but Wells MWR-11 and MWR-12 should remain in the monitoring network for chemical analysis because of their close proximity to land application areas A30, A31 and A28 (Identified in the February 2006 RWER prepared by Nolte Associates as Land Application Areas 63, 64, and 68).

In bullets two through four, the name corrections and drilling dates were corrected.

In bullet five, the name Nurisso was not added to the Reiter Property Pond heading in the table because the Nurisso property is close enough to the Reiter property for the areas to be grouped under one name.

In bullet six the Discharger requests Wells MWM-6, MWM-7, MWM-8 and MWM-18 be deleted from the monitoring program because they were installed as part of an investigation prior to adding new land application areas. The request is consistent with the goals of the monitoring program and so the wells were deleted from the tentative Order list of monitoring wells.

Comment No. 22 refers to Findings No. 65 through 67 and states the references to TDS Water Quality Objectives is incorrect and points out that there is no adopted TDS water quality objective in the Basin Plan. The comment requests clarification that the groundwater exceeds the water quality criteria that the Regional Board is using to interpret the narrative groundwater objective. (In the revised Order, the findings are Nos. 66, 67, and 68).

Staff has changed the text in Findings No. 66 through 68 to reflect the comment. To each finding a clarification has been added and an explanatory footnote has been added to the page. The text change to each finding was identical so only the text change for Finding No. 66 is presented below (in part):

Groundwater quality generally exceeds the applicable TDS Water Quality Limit¹ ~~Objective~~ ~~(WQO)~~ across the Island. Water quality is best in the northeast (approximately 900 mg/L TDS) and degrades towards the southwest (approximately 1,450 mg/L)...

The associated footnote reads:

- ¹ Water Quality Limit to apply narrative water quality objective specified in the Basin Plan for the protection of the beneficial use of groundwater.

Comment No. 26 addressed the use of surface water or potable water to reduce the concentration of TDS prior to land application to allow the mixture to be applied to land where the groundwater TDS concentrations are below 1,000 mg/L.

While the use of lower TDS concentration supplemental water can result in a lower likelihood of groundwater degradation, supplemental water is not addressed in the water balance and therefore can't be included. Staff considered how to allow the use of supplemental irrigation water and determined institutional controls on mixture ratios over time would be difficult, and application of wastewater blends to land where groundwater concentrations are below 1,000 mg/L not appropriate because that limit is central to the groundwater quality approach described in the RWD.

Comment No. 28 stated Finding No. 77 refers to an Operation and Maintenance Manual for the treatment plant but the Provisions section of the WDRs/MRP didn't require one.

Staff has added the requirement for an Operation and Maintenance Manual for the wastewater treatment plant and Recycled Water Distribution System as Provision G.1.b. It should be noted that the State Board SSMP requires preparation of an Operation and Maintenance Plan for the collection system.

Comment No. 34 requests a change to the language of Discharge Specification B.4, which would allow CEQA documents to be adopted after the adoption of the tentative Order (as long as they were completed prior to submittal of the RWER).

Staff did not make this change because it would not be consistent with the Regional Water Board's longstanding policy of not adopting orders for which CEQA has not been completed. To ensure that there is no misunderstanding about this issue, staff has added text to the following:

Finding No. 10 which states (in part):

...Recycled Water Expansion Reports (RWERs) that will be approved, as appropriate, by the Executive Officer. Any changes in size and use of land areas for recycled water storage or application may only occur in areas subject to a CEQA document that was adopted prior to the adoption date of this Order.

Finding No. 31 which states (in part):

...This Order allows application of recycled water only to land application areas that have been subject to review in CEQA documents that have been adopted prior to the effective date of this Order. Addition of new land application areas or recycled water storage ponds requires approval of ~~the an~~ RWER by the Executive Officer prior to wastewater application.

Discharge Specification B.4, which states:

This Order does not authorize the discharger of waste to Aany land area proposed for use as a recycled water storage pond, wastewater pond, or land application area unless the land area has been reviewed in compliance with ~~must have~~ CEQA evaluation and subject to a final CEQA document adopted prior to the date of adoption of this Order. ~~completed by the date this Order is adopted.~~ The Discharger's determination that a ~~of new~~ land areas is ~~as~~ exempt from CEQA does not provide an exception to this Specification. ~~will not make any newly proposed land area potentially acceptable for use.~~

Provision G.1.k.ii, which states:

Documentation that a final CEQA document analyzing the use for land application or recycled water storage ponds has been completed prior to the date of adoption of this Order, evaluation has been provided for the property, that the proposed use is consistent with the assumptions of the CEQA document, and that the mitigation measures included in the CEQA documentation have been implemented.

Comment No. 43 identifies a significant overlap between the Master Reclamation Permit and the Recycled Water Operations Plan (both reports are required by the tentative Order's provisions).

Staff recognizes some overlap between the reports but the Master Reclamation Report is required by CWC Section 13523.1 and the Recycled Water Operations Plan is required by the Title 22 Engineering Report approval letter issued by DHS on 28 April 2006.

Comments on Monitoring and Reporting Program

Comment No. 1 requests a change in the text for the Effluent Monitoring sample location.

Staff changed the text to clarify where samples are collected, however, not as the Discharger requested. Because the Discharger must meet strict limits for total coliform organisms, it would not be prudent to allow sampling further from the disinfection system where natural conditions will cause an increase in coliform. The text was changed to read (in part):

Effluent samples shall be collected at a location downstream of the disinfection system and upstream of ~~before discharge to~~ any effluent storage pond and shall be representative...

Comments on the Information Sheet

Comment No. 7 states the list of constituents and water quality criteria misidentifies the water quality criteria as water quality objectives but most of the criteria have not been adopted by the Regional Board and are an interpretation of a narrative groundwater objective.

Water Code section 13263 requires the Regional Board to implement the Basin Plan. The Basin Plan sets forth numeric and narrative water quality objectives and includes an implementation policy for application of water quality objectives. This Order applies the Basin Plan's Policy for Application of Water Quality Objectives in determining the numeric limits to determine compliance with the narrative objectives. The numeric limits are based on information provided by the Discharger and on relevant criteria and guidelines developed by other agencies. The Discharger has not provided information to support application of other relevant criteria or guidelines than those implemented in this Order.

California Sportsfishing Protection Alliance Comments

The California Sportsfishing Protection Alliance (CSPA) comments are presented in a 20 August 2006 letter. Many of the CSPA comments are related to the facility requiring an NPDES permit. Staff believes the discharge is appropriately categorized as a land discharge facility as described in response to comments below. CSPA's comments are paraphrased in italics and staff's response is presented below. CSPA states, "CSPA believes the Order is illegal and nonprotective and requests designated party status." CSPAs comments are discussed below:

Comment No. 1 states the tentative Order does not require a pretreatment program as required by the Clean Water Act for Publicly Owned Treatment Works (POTWs) with a total design flow greater than 5.0 MGD.

The discharge is to land and an NPDES permit is not required; therefore, the provisions of the Clean Water Act (CWA) do not apply. For NPDES permits, a pretreatment program is required where the flow exceeds 5.0 MGD and the facility receives industrial waste that could pass through or upset the treatment plant. In this case, the wastewater that will be discharged to the WRP will originate in residences and commercial establishments, not industrial activities and the Order is not an NPDES Permit.

Comment No. 2 states the tentative Order does not discuss any long-term agreements between the land application area property owners and the City for wastewater application and it is unclear if CEQA has been addressed for all the recycled water use areas.

Staff agrees it would be preferable for the City to own all the land application areas or to have long term agreements in place, but is not required under the Water Code water reclamation provisions. A signed Form 200 from each property owner is required as part of the RWER report.

CEQA must be addressed for all new land application areas or recycled water storage ponds. This issue is discussed in response to the City of Lathrop Comment No. 34 above. To summarize, only CEQA documents adopted prior to the adoption of the tentative Order will be considered in reviewing the RWERs, and the proposed land use (land application area or recycled water storage pond) must have been considered in the CEQA document. All mitigation measures identified in the CEQA document must be implemented before the land can be used for the purpose of waste application or storage.

Comment No. 3 states the tentative Order fails to require the Discharger to delineate wetlands within the land application areas and establish any necessary setback, further, the Discharger is not required to conduct biological surveys to identify endangered species.

Staff does not require additional investigation of wetlands or sensitive biological areas as part of preparation of an RWD or in WDRs. If such issues are identified in the CEQA documents, then the mitigation measures that are adopted as part of the final CEQA document are included in the orders as appropriate. As previously stated, the mitigation measures that are identified in the CEQA documents will be implemented as part of the RWER review/approval process. In anticipation that some of the land areas may not be suitable for waste application or storage, the Discharger has identified more land application area and storage pond capacity than is anticipated to be needed based on the water balance. Furthermore, the tentative Order is clear that while the maximum flow rate obtainable under the tentative Order is 6.24 MGD, there is no guarantee that any increase over the 0.75 MGD will be granted through the RWER review process.

Comment No. 4 describes the use of crops in land application areas as an integral part of waste treatment.

Staff agrees that in land treatment, crops and soil microorganisms are important components of the waste treatment. In general, the higher the level of treatment prior to application, the less important the component of land treatment. In this case, the wastewater treatment is tertiary disinfected recycled water that includes denitrification. Generally that would mean a higher recycled water application rate might be acceptable. Despite the higher level of treatment, the discharge will occur at agronomic rates for both nitrogen compounds and water application. TDS compounds are more problematic and are best controlled using source control. As a measure of source control, the Discharger will convert the sodium hypochlorite disinfection system to an Ultra Violet (UV) disinfection system with the first increase in flow. In addition, the use of potassium hydroxide instead of sodium hydroxide is being investigated by the Discharger to change the character of the dissolved solids in the wastewater.

(Potassium is a plant macronutrient and is more likely to be taken up by the crop than sodium). Increasing the uptake of dissolved solids by plants allows those solids to be removed from the land application area when plants are harvested.

Comment No. 5 seeks a prohibition on the use of infiltration basins for application of recycled water because groundwater is very shallow, percolation rates are too high, and nearby dewatering activities occur; and seeks a prohibition of siting infiltration basins in areas of shallow groundwater and in areas where reclamation ditches or dewatered areas are pumped to surface water bodies.

Staff agrees that groundwater levels in some proposed land application areas can be shallow. This is a problem with a considerable portion of the City of Lathrop and was an issue at the nearby Crossroads Wastewater Treatment Plant. While groundwater is always relatively shallow in the area (within 20 feet of the ground surface), it is especially shallow during the winter and spring runoff period when river stages are higher. At those times, groundwater elevations may come within a few feet of the surface. The issue is addressed by requiring the Discharger to have adequate storage so that recycled water can be stored during the seasons when crop irrigation is not needed, soil conditions are not suitable for wastewater application, and during rain events. The tentative Order requires the Discharger to maintain adequate storage to store that recycled water through the wet seasons and be able to contain the 100-year return annual total precipitation. Presently, the Discharger has constructed more storage capacity and land application areas than are anticipated to be needed based on the RWD water balance. A summary of the present storage and land application capacities is presented below:

<u>Parameter</u>	<u>Units</u>	<u>Minimum Required</u>	<u>Available</u>
Storage Capacity	Million Gallons	127.4	150.7
Land Application Area	Acreage	173.0	182.9

As stated above, recycled water will be applied at agronomic rates and microorganisms in the soil treat waste constituents, so treatment of recycled water should not be a concern. The use of infiltration basins will be discouraged but may be needed in cases where evapoconcentration resulting from cropped areas might result in groundwater degradation.

Water Recycling Specification E.5 requires a 50 foot setback from a land application area to surface water or irrigation canal drainage course. This setback requirement will ensure waste treatment occurs in the soil and that considerable mixing and dilution of waste constituents that survive the land treatment (such as fixed dissolved solids), occurs before any discharge to an irrigation canal that might occur.

Comment No. 6 states all property owners of the wastewater land application/disposal areas must be included in the Order as Dischargers.

The tentative Order is written as a Master Reclamation Permit as described in CWC Section 13523.1, and CWC Section 13260(m) does not require an RWD to be filed by users of recycled water that is supplied by a supplier or distributor for whom a master recycling permit has been issued.

In this case naming all the owners, before their land is evaluated for waste discharge, is inappropriate. For example, in the future, a proposed parcel may be determined unacceptable for waste application or storage but the owner would already be named in the Order.

Comment No. 7 states Finding No. 9 incorrectly defines recycled water. To clarify the definition, the following text was added to the Finding:

After treatment, domestic wastewater is called recycled water. Recycled water is defined in CWC Section 13050 and in Title 22 Section 60301.230 (disinfected tertiary recycled water). The treatment complies with the definitions in both documents. Recycled water will be stored in lined storage ponds and applied to land application areas...

Comment No. 8 states the tentative Order fails to restrict the discharge of unpolluted water to the WWTP including the collection system and that an Infiltration and Inflow (I&I) workplan to correct the situation is required. Finding No. 14 refers to significant I&I that is believed to be occurring.

Staff notes that the assumption in the finding is based on the low waste constituent concentrations. Assuming the wastewater generated is of typical strength, dilution must be occurring. The discharge from Mossdale Landing has only recently begun and the data presented is from the May and June 2006 self-monitoring reports. The Discharger also commented on this finding requesting that clarifying language be added. The revised text is presented below:

Because the Mossdale Landing constituent concentrations are low, significant inflow and/or infiltration is believed to be occurring relative to the current wastewater flowrate.

It should be noted that the tentative Order includes flow limits. Should I&I be a significant problem, the Discharger will be highly motivated to correct such problems because discharge of clean water to the wastewater system reduces the system capacity and thereby reduces the number of homes that can be served by the wastewater system.

Comment No. 9 states no dye/tracer study and therefore compliance with Title 22 cannot be demonstrated.

The WRP will consist of two treatment systems WRP-1 and WRP-2; WRP-1 is an existing treatment system, WRP-2 will be constructed at a later date. Presently, disinfection is accomplished by use of sodium hypochlorite but that will be replaced with UV disinfection. The disinfection systems that are and will be employed are described in Section 2.6.7 of the January 2006 Title 22 Engineering Report prepared by Eco:Logic Engineering. Section 2.6.8 of the report describes additional disinfection reliability features. DHS approved the Title 22 Engineering Report on 28 April 2006. In addition, tentative Order Provision G.1.j.xiv.a requires documentation of operational status of the wastewater treatment system and compliance with all Title 22 requirements as part of the Recycled Water Operations Plan (which is a report required as part of the RWER submittals).

Comment No. 10 states a Pollution Prevention Plan has not been provided.

Pollution Prevention Plans are not normally required for land discharge of recycled water that does not contain a significant amount of industrial wastewater. The tentative Order imposes effluent limitations that include a TDS limit of 600 mg/L, approximately 275 mg/L above the TDS concentration in the supply water. The statement in Finding No. 33 regarding the use of potassium hydroxide rather than sodium hydroxide is a change staff has been encouraging dischargers to make because potassium is more likely to be taken up by a crop.

Comment No. 11 states the City could easily prohibit the use of water softeners and that the CEQA documents indicate wellhead treatment for salt is viable. The Order must prohibit regenerative water softeners.

Staff agrees that the use of regenerative water softeners (water softeners that are regenerated with brine on-site, the brine is then discharged) when the supply water quality is good is not desirable and staff would support a City prohibition of the use of regenerative water softeners. However, CWC Section 13360(a) prohibits WDRs from specifying the manner in which compliance is obtained, therefore the Regional Board may impose effluent limitations that are protective of water quality but not determine for the Discharger how compliance with that effluent limitation is achieved. The tentative Order includes a TDS limit that does not allow a significant increase in the TDS concentration over the water supply quality and limits the locations of discharge of recycled water.

Comment No. 12 states the tentative Order does not allow adequate public comment for most of the new development areas and that approval of RWERs must be brought before the Regional Board.

Staff makes every attempt to encourage public participation. In this case, the CEQA documents allowed public participation in the scoping and evaluation of environmental impacts. The potential land areas that might be used for wastewater application have gone through the CEQA process. No new land areas can be approved unless the CEQA evaluation has already been completed as discussed above.

Staff does not believe it necessary to require RWERs to be brought to the Regional Board for consideration because a number of orders have included similar language that allows dischargers to increase discharge flow rates after completing improvements to land application areas. This approach has been implemented with the City of Lathrop twice, fairly recently. The Crossroads wastewater treatment plant (which treats wastewater from the Crossroads Industrial Park, and the existing WDRs for the City of Lathrop and Califia, LLC (Order No. R5-2005-0045) both included flow rate increase approvals through the Executive Officer after improvements were completed. This Order is consistent with the requirement of Water Code Section 13500 et seq.

Comment No. 13 states all land application areas must have protection from the 100-year flood zone.

Staff disagree that all land application areas must be protected from the 100-year flood zone. Historically, WDRs have allowed land application areas to be in flood plains (although ponds must be protected) when wastewater is disinfected and the discharger has adequate storage. In this case, the

Discharger has constructed more storage than is required. The tentative Order also includes requirements on application that requires wastewater not be applied to saturated ground or when climatic conditions are not favorable. Wastewater will be stored during the winter and spring runoff months (although some application is allowed when conditions comply with the tentative Order) and applied during the summer and fall growing seasons. The system includes wastewater storage so that wastewater does not have to be applied throughout the year.

Comment No. 14 states irrigation of recycled water to land application areas when groundwater elevations are within 12 feet of the surface must be prohibited and that irrigation rates may not exceed the calculated evapotranspiration rate that limits wastewater to the active root zone.

Staff agrees that more unsaturated zone is preferable when applying wastewater to land application areas, because as previously stated, the soil acts as part of the treatment process. However, not all locations in the Central Valley Region have the desirable depth to groundwater. To limit all wastewater application to areas that have groundwater deeper than 12-feet would severely limit land treatment as a recycled water beneficial reuse.

When groundwater conditions are less than optimum, one way to address the problem is to increase wastewater quality. In this case, the Discharger is producing Title 22 disinfected tertiary recycled water. The higher quality of recycled water means that other concerns, such as pathogen reduction as wastewater percolates through soil is a lower concern.

Furthermore, the 12-foot interval recommended in the comment is considerably more than the *Guidelines for Land Development* attached to the Water Quality Control Plan (Basin Plan), which requires a minimum of 5-feet of unsaturated zone for septic tank effluent. The recycled water quality is much higher than septic tank effluent.

Most WDRs allow some excess application of recycled water to be applied because the recycled water is not evenly applied everywhere in the land application area. The excess application of recycled water is not considered a significant threat to groundwater quality because the percolate concentration is anticipated to be less than the groundwater concentrations. Furthermore, winter stormwater will provide some dilution in the land application areas.

Comment No. 15 states discharge to land application areas with high percolation rates should be prohibited.

Staff notes that the higher published infiltration rate of 6.0 in/hr is approximately one-half of the upper limit for infiltration contained in the *Guidelines for Land Development*, included in the Basin Plan, which allows up to 12 in/hr. As stated previously, the anticipated percolate concentration should allow water that reaches the groundwater to not degrade groundwater quality. The upper limit in the Guidelines is meant to ensure adequate filtration of waste constituents occurs in absorption beds, because the recycled water is of higher quality than septic tank effluent, adequate land treatment should be available at the published infiltration values.

Comment No. 16 states that due to the ongoing dewatering activities that transports groundwater underlying the application areas to surface waters, the Discharger must obtain an NPDES permit to use the River Island land application areas.

Staff disagrees with the concept that dewatering activities on the Island requires this Order to be an NPDES permit. Dewatering activities are being performed to prevent the Island from flooding. As the groundwater moves to the canals, where it can migrate to the lift station, it mixes with groundwater from a much larger area. It is doubtful that wastewater constituent could be identified in the water that gets pumped over the levee because the same constituents in the wastewater exist in natural groundwater. As previously stated, in response to Comment No. 5, Water Recycling Specification E.5 requires a 50 foot setback from a land application area to a surface water or irrigation canal drainage course.

Comment No. 17 states CEQA mitigation measures were not incorporated into the Order and are only listed in the Findings. The tentative Order fails to incorporate CEQA mitigation measures that are necessary to ensure water quality.

The Order includes significant mitigation measures to protect water quality consistent with the Basin Plan and the Water Code. The findings regarding mitigation measures have been revised to provide a reference to the areas of the Order that address mitigation measures identified in the CEQA documents. The Order would allow land application only to those areas for which a CEQA document has been completed prior to the date of adoption of this Order.

Comment No. 18 states there is no clear definition of incidental runoff or quantification of what is an unreasonable affect on beneficial uses. The comment describes discharge to surface waters via groundwater pumping or overflow from a containment basin as not incidental.

Staff believes Discharge Specification No. 7 fairly describes the concept of incidental runoff and agrees with the comment regarding overflow from a containment basin as not incidental. All storage ponds are required to maintain a minimum of two-feet of freeboard (Discharge Specifications B.16 and B.17) and the ponds must be managed so that adequate storage capacity is available as the wet season approaches (Discharge Specification B.18).

As stated above, staff does not agree that maintenance dewatering is a discharge of waste constituents.

Comment No. 19 states the MRP fails to require the Discharger to sample the discharge for priority pollutants at least twice a year and that pH monitoring should be continuous with a pH meter.

Priority pollutants are generally not required in the land discharge program. Collecting continuous pH data is not considered to be a critical monitoring parameter as there is no effluent limitation on pH with one exception: Effluent Limitation E.4 which states, "No stored wastewater or recycled water shall have a daily average pH less than 6.5 or greater than 10.0."

Comment No. 20 states the tentative Order lacks a legally defensible antidegradation analysis.

Staff notes that the Order does include an analysis of the likelihood of groundwater quality degradation and determined that the discharge is unlikely to degrade groundwater quality. This is based on the following:

- All wastewater and recycled water storage ponds will be lined with at least 40-mil thick HDPE, which will minimize percolation of waste constituents to groundwater (Finding No. 30).
- Recycled water will be applied at agronomic rates to land application areas (Finding No. 31).
- More land application areas than the minimum required are available for use (Finding No. 28).
- The Discharger is converting a sodium hypochlorite disinfection system to a UV disinfection system thereby lowering TDS concentrations in recycled water (Findings No. 33 and 34).
- BPTC measures are being implemented from the start at the WRP (Finding No. 77).
- The Discharger is limiting application of recycled water to land areas where shallow groundwater TDS concentrations exceed 1,000 mg/L. The anticipated recycled water quality is 525 mg/L, and the percolate TDS concentration is anticipated to be approximately 969 mg/L (Finding No. 72).
- An Antidegradation Analysis and a Treatment and Control analysis were presented in the tentative Order (Findings 74 through 79).

A full antidegradation analysis is only required when a reasonable expectation of possible groundwater degradation exists. Based on the discussion provided above, staff believes the discharge is a low threat of groundwater degradation.

Comment No. 21 states the Order fails to comport with Title 27 requirements, and the Discharger's failure to adequately characterize groundwater quality and identify BPTC, coupled with staff's failure to conduct the legally required antidegradation analysis, makes a mockery of any exemption from Title 27 requirements.

Staff believes the Order complies with the applicable Title 27 requirements. Staff agrees adequate groundwater quality data has not yet been presented to the Regional Board. Groundwater quality investigations will be performed prior to submitting RWERs. Provision G.1.j.vii requires at least two groundwater sample events to be performed at proposed land application areas. As previously described, every land application area may not have a groundwater monitoring well associated with it. Land areas that are larger, which will receive more recycled water, will be the areas where groundwater monitoring is focused. The groundwater investigations will be performed in accordance with approved groundwater monitoring workplans so staff will be able to review and approve, or provide comments on, the adequacy of groundwater monitoring networks prior to installation.

SUMMARY AND RECOMMENDATION

Staff recommends that the Regional Board adopt the Waste Discharge Requirements and Master Reclamation Permit as proposed for the City of Lathrop.

STAFF REPORT
WASTE DISCHARGE REQUIREMENTS AND MASTER RECLAMATION PERMIT
CITY OF LATHROP
WASTEWATER RECYCLING PLANT
SAN JOAQUIN COUNTY

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Attachment A City of Lathrop 15 August 2006 Comments of Tentative WDRs and MRP
Attachment B California Sportsfishing Protection Alliance, WDRs and MRP for the City of Lathrop

21/22 September 2006 Regional Board meeting
TRO/MRL/WSW: 9/5/06